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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,574

08/29/2006

Hendrik Dohle

23387

1571

535 7590 06/17/2008

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EXAMINER

SUITTE, BRYANT P

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

06/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,574	Applicant(s) DOHLE ET AL.	
	Examiner BRYANT SUITTE	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/17/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

**CATHODE FOR A DIRECT METHANOL FUEL CELL AND METHOD FOR
OPERATING THE SAME**

Examiner: Suitte

10/553,574 Art Unit: 1745

June 3, 2008

Claim Objections

1. Claims 2 and 5 objected to because of the following informalities: Claim 2 comprises "or claim" and claim 5 comprises "to one of claim 4". Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1,3 and 4 are rejected under 35 U.S.C. 102(a) as being anticipated by Kosako et al. (EP 1,429,408).

Kosako teaches an electrolyte membrane electrode assembly for a fuel cell, which comprises an anode, a cathode and an electrolyte, comprising an anode-side catalyst layer (94) and a cathode-side catalyst layer (96) provided on both sides of a polymer electrolyte membrane (91) which initiates the transport of protons in the fuel cell. See paragraph 2 and 3. Kosako teaches an anode-side diffusion layer (93) and a cathode-side diffusion layer (95) having electronic conductivity. See paragraph 2 and 3 and see figure 12b. The cathode-side diffusion layer has projections (99) that are directly in contact with the electrolyte membrane. See paragraph 12 and figure 12b. A method to operate a low temperature fuel cell is also taught.

Regarding claim 3, Kosako discloses that the gas diffusion layers comprise carbon paper or carbon cloth (ion conducting and proton conducting material).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosako et al. (EP 1,429,408) as applied to claims 1,3,4 above, and further in view of Smotkin (US 2002/0009627).

Regarding claim 5, Kosako discloses a polymer electrolyte membrane for a fuel cell as recited in paragraph above. However, Kosako does not disclose a fuel cell that utilizes methanol or methanol water mixture as a fuel.

Smotkin discloses the utilization of methanol as a fuel for a fuel cell. See figure 1. Therefore, it would have been obvious to one of ordinary skill in the art to utilize methanol as a fuel with the fuel cell of Kosako because Smotkin teaches that methanol can be used as a fuel for a fuel cell without utilization of a reformer to convert the fuel to a hydrogen-rich fuel gas. See paragraph 5.

Regarding claim 6, Kosako teaches that air (atmospheric oxygen) is utilized as an oxidant gas in a fuel cell. See paragraph 2.

Regarding claim 7, Kosako discloses a polymer electrolyte membrane for a fuel cell as recited in paragraph above. However, Kosako does not disclose a fuel cell that comprises a free cathode compartment.

Smotkin discloses a MEA fuel cell comprising a graphite flow field region (free cathode compartment). See figure 1. In this region the water is expound from the fuel cell. See figure 1. therefore, it would have been obvious to one of ordinary skill in the art to utilize the graphite flow field region with the MEA fuel cell of Kosako because Smotkin teaches that water is expelled in effort not to flood the diffusion layer.

Allowable Subject Matter

6. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 2 would be allowable because the prior art does not disclose or suggest the catalyst layer of the cathode is bound directly on the free cathode compartment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYANT SUITTE whose telephone number is (571)270-3961. The examiner can normally be reached on Mon-Fri 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1795

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BS

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795